



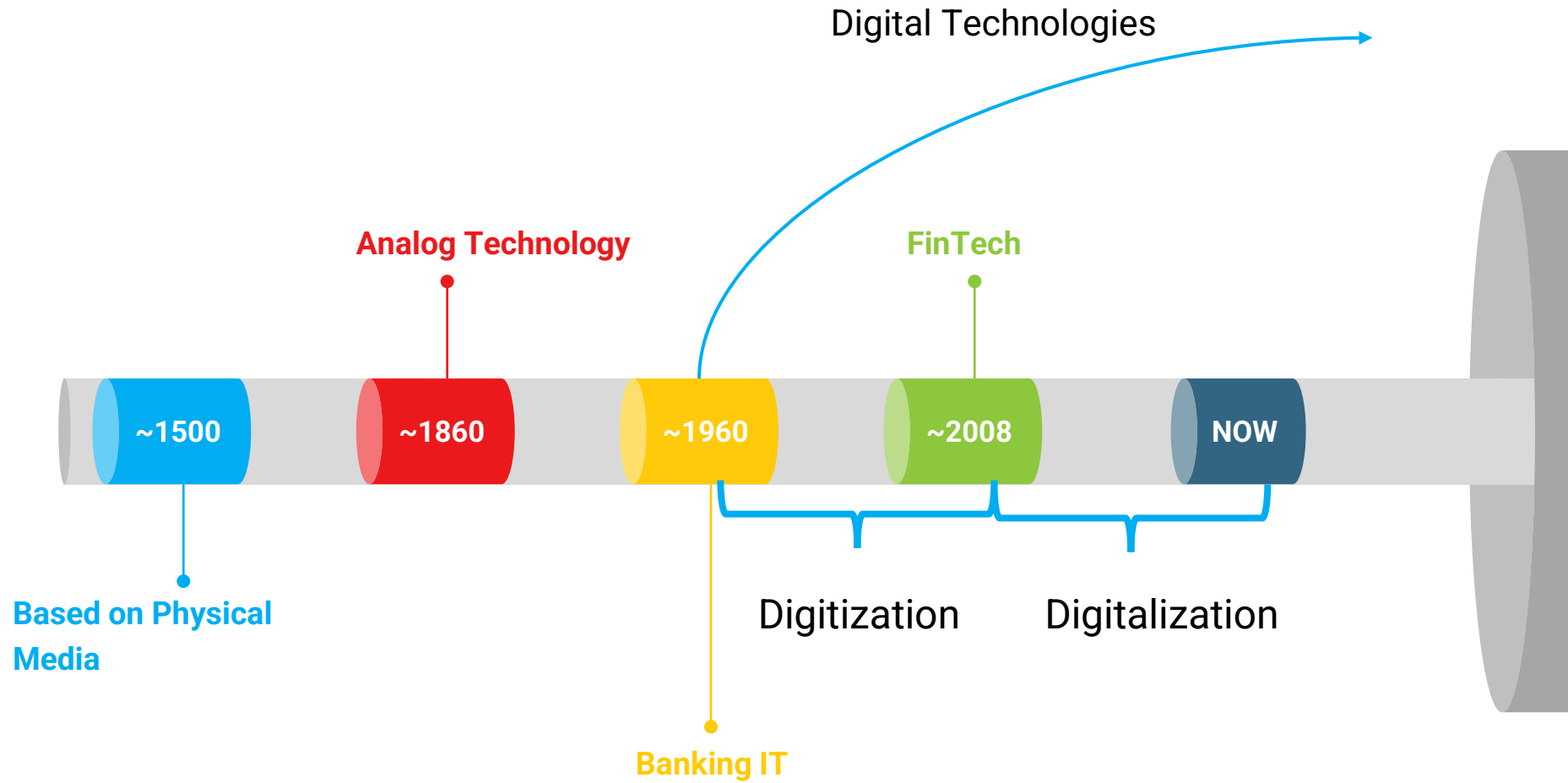
# Digital Transformation

**Topic 2 AFIN8014 FinTech and Innovation**

# Learning Objectives

- Differentiate digitization and digitalization phases in the financial industry
- Get insights into how digitalization intersects with finance
- Characterize the digital transformation level
- Understand the concept of the platform economy and how is it transforming the financial sector

# Evolution of Financial Technologies



Source: Based on Rainer et.al., 2018

## Digitization of Finance Industry

Digitization is the process of storing, converting, processing or transferring information in a format recognized by computers.

## Digital Accounts 1960s

Accounts (deposits and money transactions) began to be stored and recorded in computers.



DATE	TX	WITHDRAWAL	DEPOSIT	BALANCE	MT
14	X2		53,000.00	++++++3,019.21	60010
/14	IN		++++++121.85	++++++3,141.06	0000A
/14	X2	140.00		++++++3,001.06	60010
/14	X1		++++++40,000.00	++++++43,001.06	60010
/14	X2		20,000.00	++++++23,001.06	60010
/14	X2		4,000.00	++++++19,001.06	60010
/14	X2		15.00	++++++18,986.06	60010
/14	FE		2,000.00	++++++16,986.06	60010
7/14	X2		3,000.00	++++++13,986.06	60010
7/14	X2		2,000.00	++++++11,986.06	60010
07/14	X2		++++++10,000.00	++++++21,986.06	60010
07/14	X1				
08/14	X2		20,000.00	++++++1,986.06	60010
08/14	X2		1,500.00	++++++486.06	60010
08/14	X2		100.00	++++++586.06	60010
08/14	X2		++++++20,222.61	++++++20,608.67	60010
09/14	X1		20,000.00	++++++1,108.67	60010
09/14	X1		++++++500.00	++++++1,108.67	60010

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## ATMs 1960s

Provide electronic interfaces to customers



## Swift (BIC) code

Consists of 8 to 11 characters

AAAA

Bank code  
Letters only

BB

Country code  
Letters only

CC

Location code  
Letters and digits

DDD

Branch code  
Letters and digits

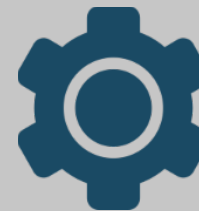


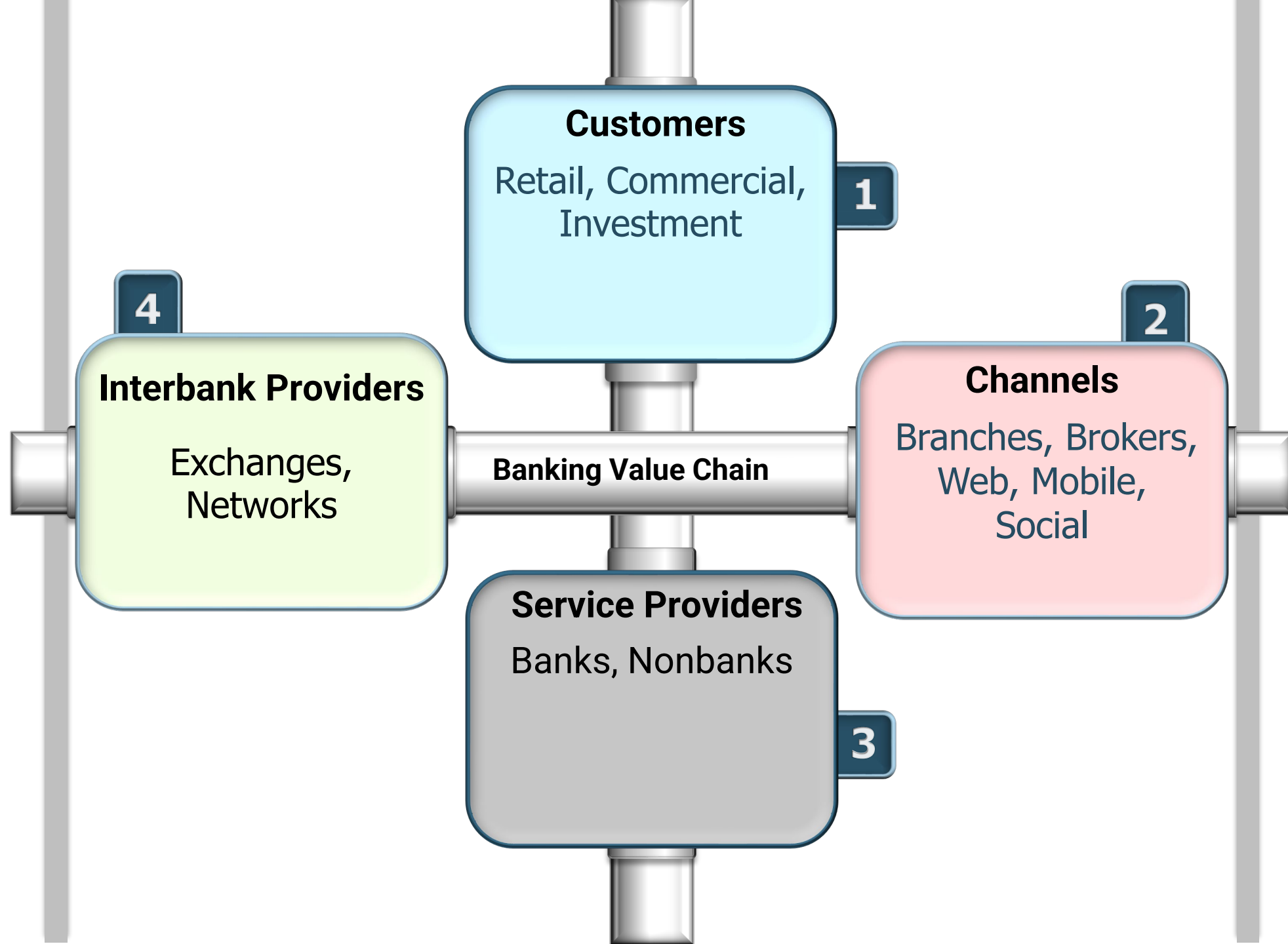
## SWIFT 1973

Established multinational  
electronic network

## Online Banking 1980s

More sophisticated electronic  
interfaces to customers





### High IT investment

**1**

Globally, the banking sector spends an average of 4.7 percent to 9.4 percent of operating income on IT.

Gopalan et al. (2012)

The degree of vertical integration in the banking industry has remained high.

**2**

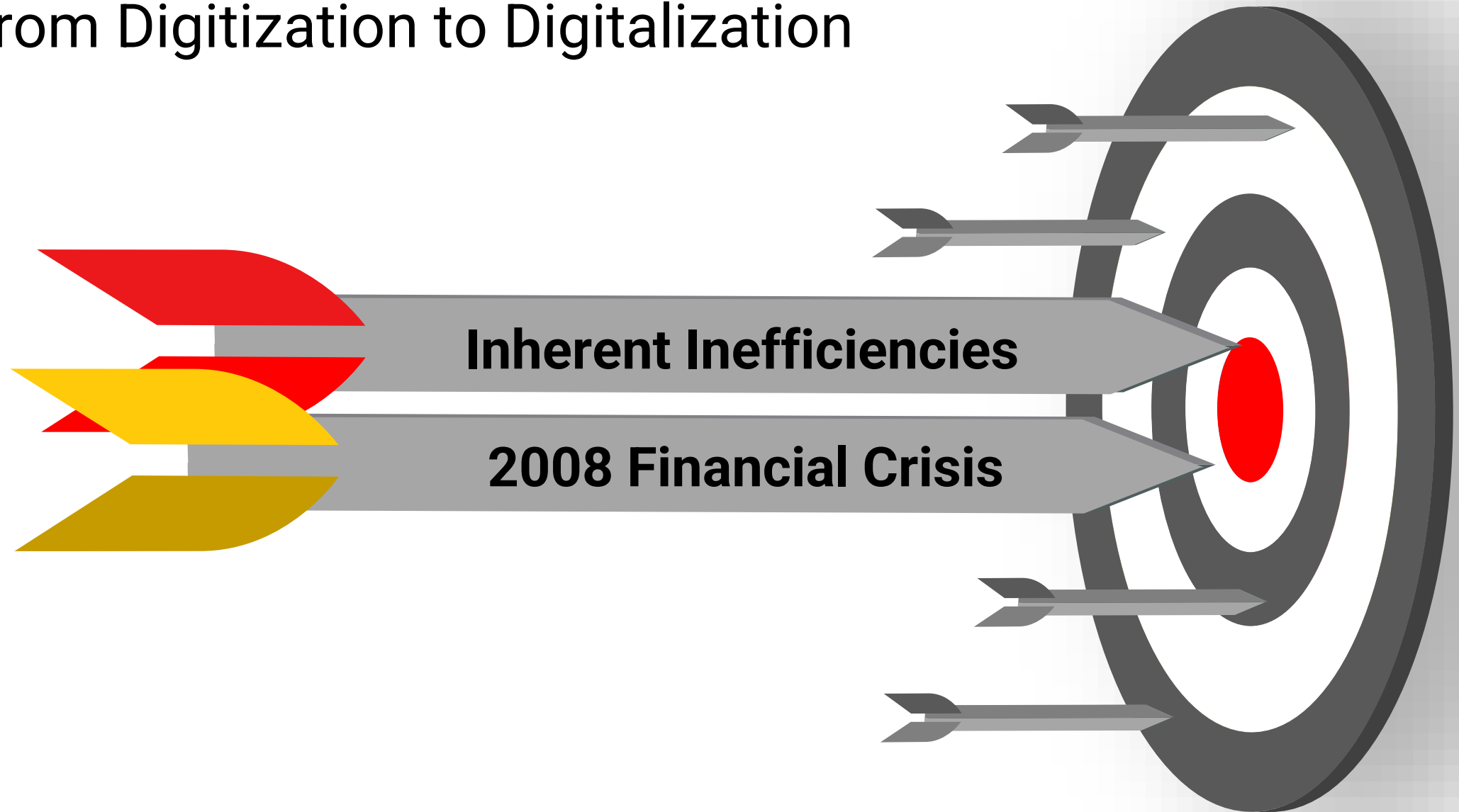
European banks: a reduction of 5 % of vertical integration from 82.2% (1995) to 77.2% (2002)

Gellrich et al. (2005)

The number of banks has decreased but the number of employees (i.e. manual workforce) has increased.

**3**

# From Digitization to Digitalization



## **Digitization**

the process of storing, converting, processing or transferring information in a format recognized by computers.



## **Digitalization**

the change in social, business and economic behaviour on the adoption of new technologies.



# From Digitization to Digitalization



## Technology Incorporation

- Internet of Things
- Cloud
- Virtualization
- Big Data
- Social Media
- Machine Learning
- 3D Printing
- Mobile Network

## New Business Models

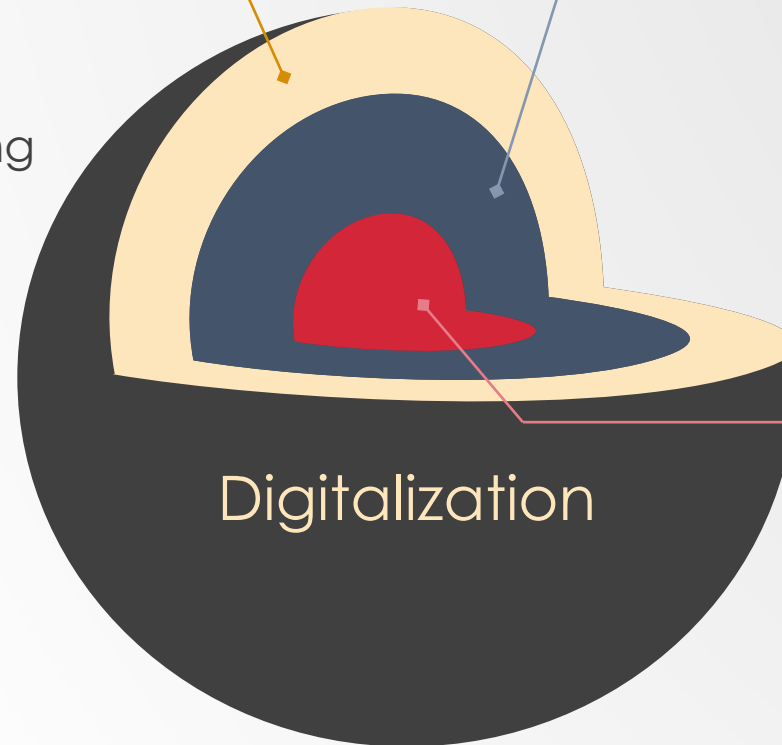


an eco-system where all markets and consumers could participate

## Participators Collaboration



consumers, businesses and the government collaborate with systems, processes, people and the entire business community



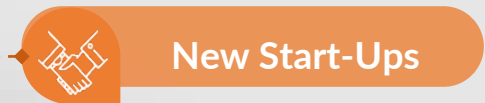
Digitalization



### IT Diffusion

growing pace of diffusion of innovative downstream IT solutions.

## Driver Forces: FinTech Movement



### New Start-Ups

emergence of non-banks and new start-up businesses offering focused financial services



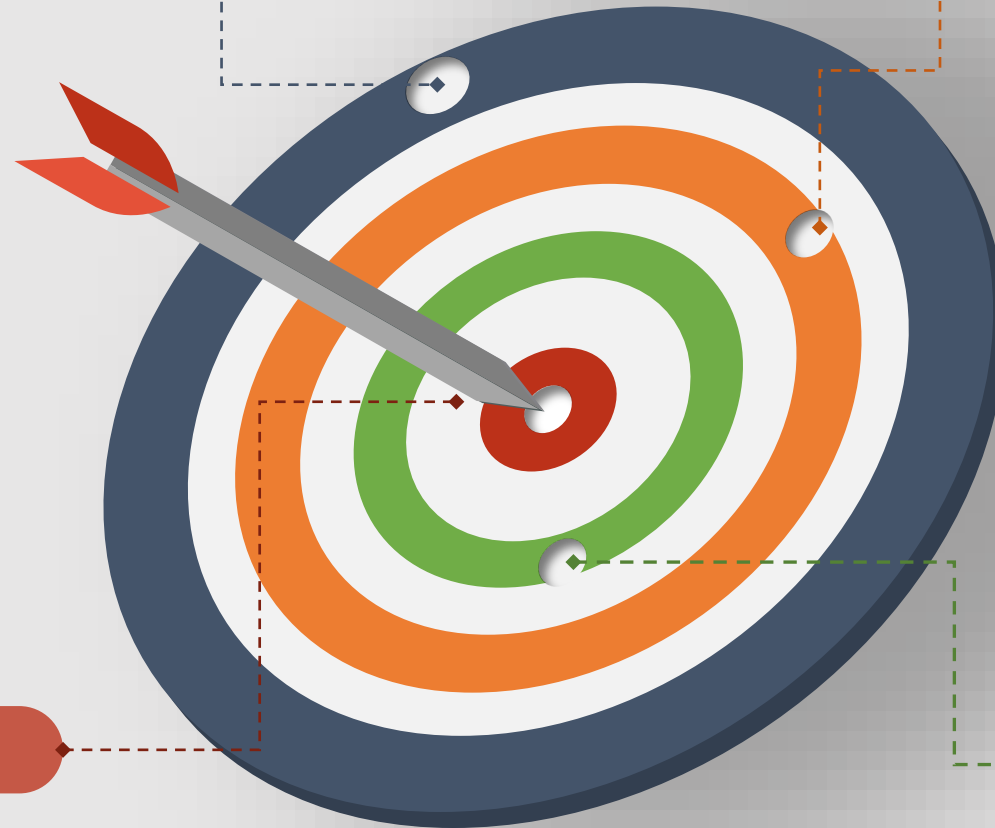
### Changing Customers

changing behaviour of banking customers towards online banking and multi-bank-relations



### Changing Regulations

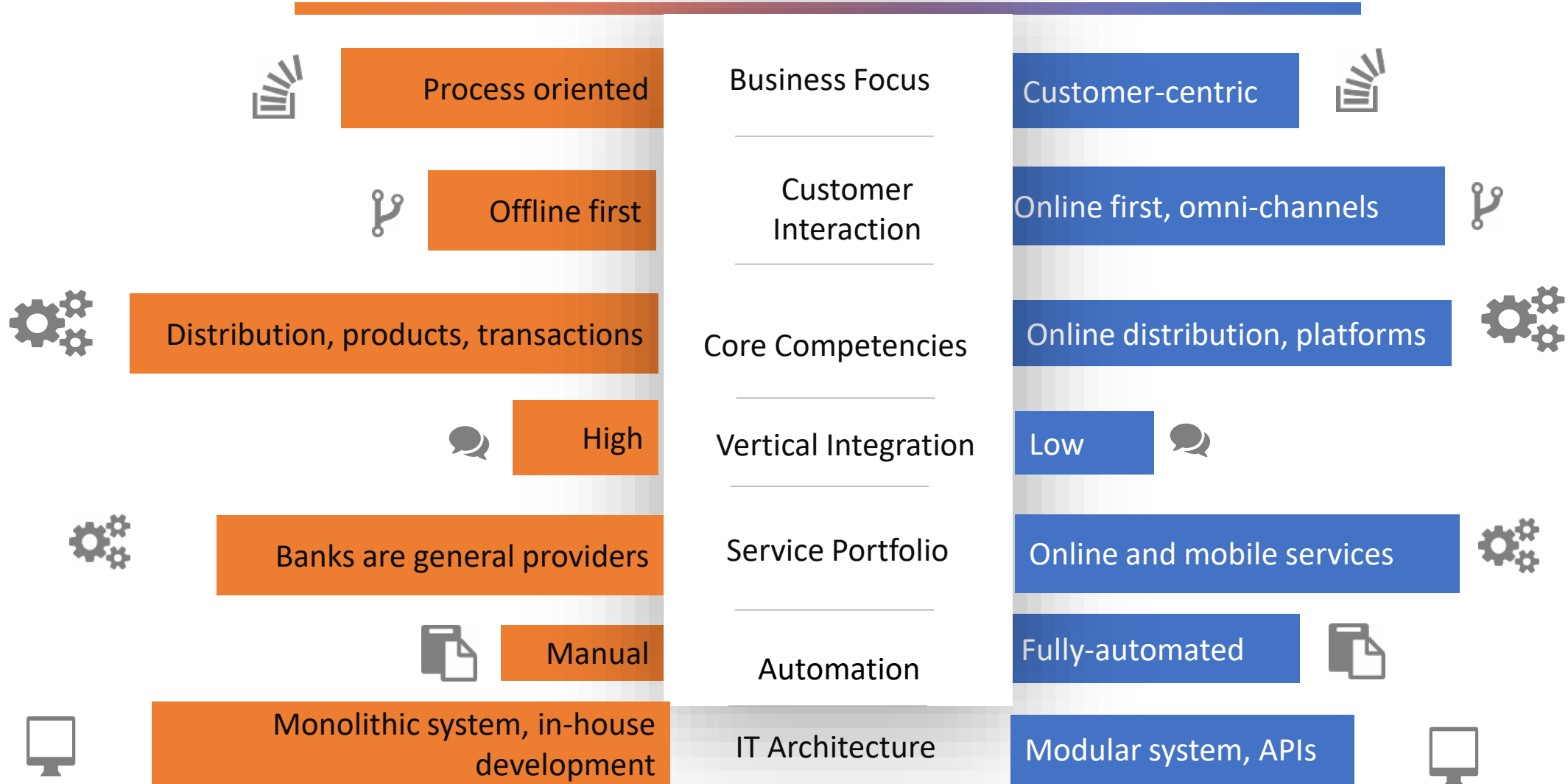
regulatory and competitive consequences of the financial crisis that occurred in 2008



## Banking IT (up to around 2008)

VS

## FinTech Movement (after 2008)



Digital Transformation Level: Internal Organization

## Banking IT (up to around 2008)

VS

## FinTech Movement (after 2008)



Small number of network partners

Networking

Many specialized partners



High margin in core business

Margins and Cost

Lower margin, higher competition



Other financial providers

Competitors

Star-ups and lateral entrants



Hierarchical

Culture

Cooperative, agile



High customer royalty

Customer Retention

Reduced switching cost

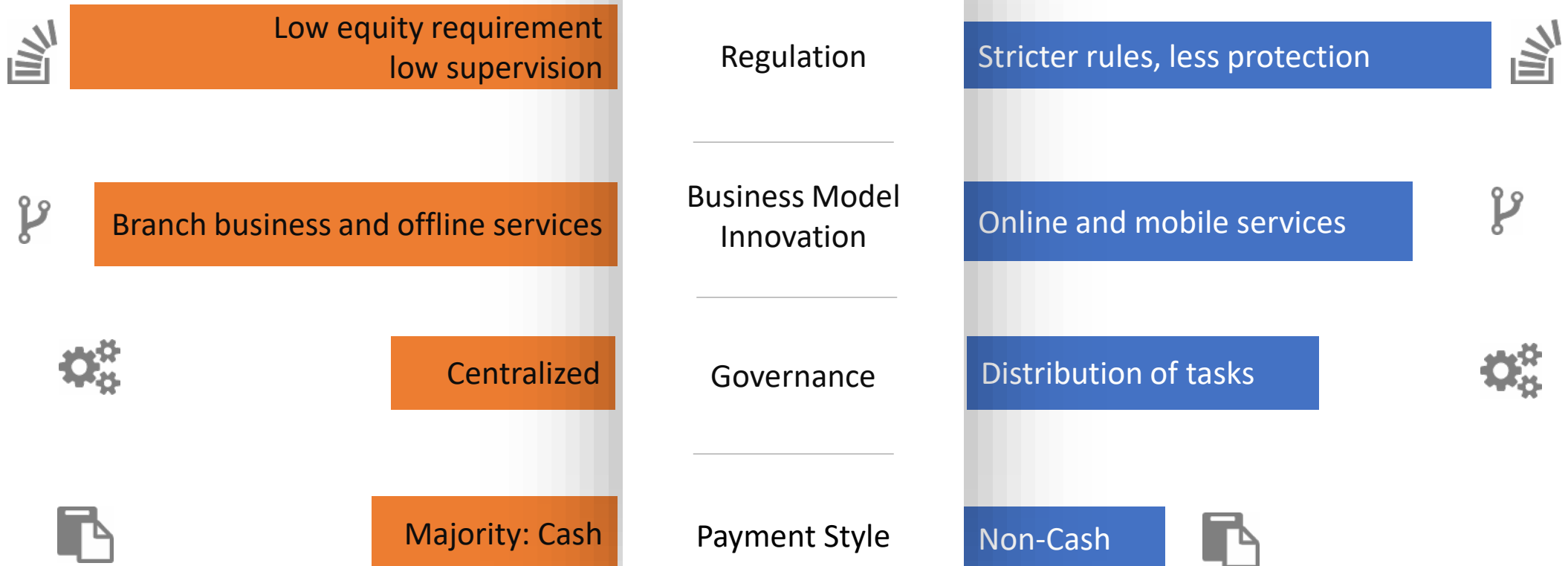


Digital Transformation Level: **Networking Organization**

## Banking IT (up to around 2008)

VS

## FinTech Movement (after 2008)



## Digital Transformation Level: External Organization

Source: Alt, et.al., 2018

### Required Readings

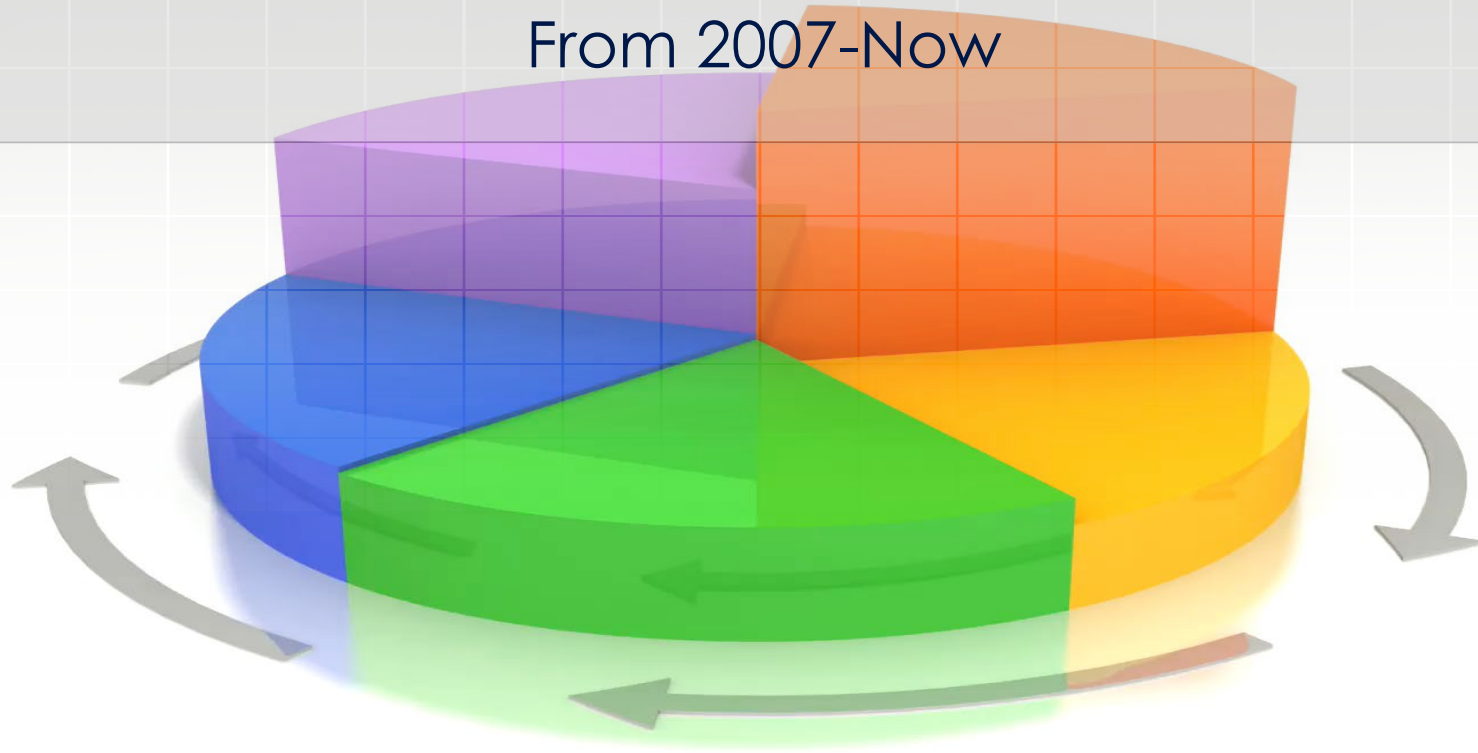
1. Alt, R., Beck, R., and Smits, M. (2018). FinTech and the transformation of the financial industry. *Electronic Markets*, 28(3), 235-243. DOI: 10.1007/s12525-018-0310-9
2. EY, 2019, How banks could join the platform economy. Available at: [https://www.ey.com/en\\_gl/financial-services-emeia/how-banks-could-join-the-platform-economy](https://www.ey.com/en_gl/financial-services-emeia/how-banks-could-join-the-platform-economy)



From Digitization to Digitalization: Platform Economy

# Mobile Phone Market

From 2007-Now

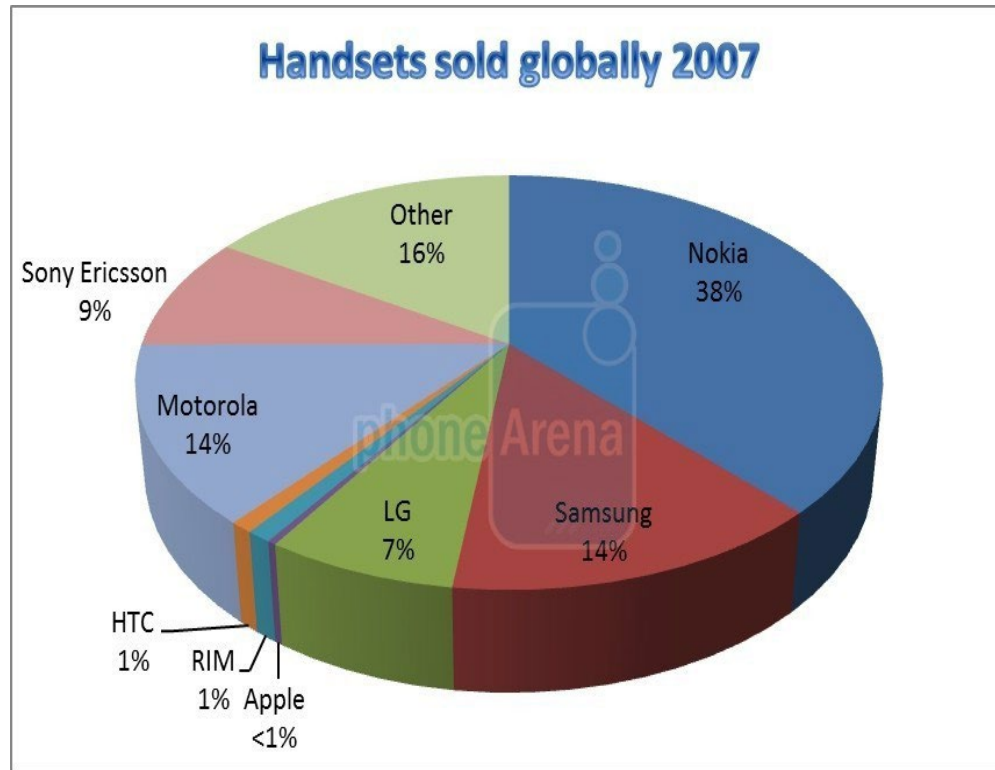




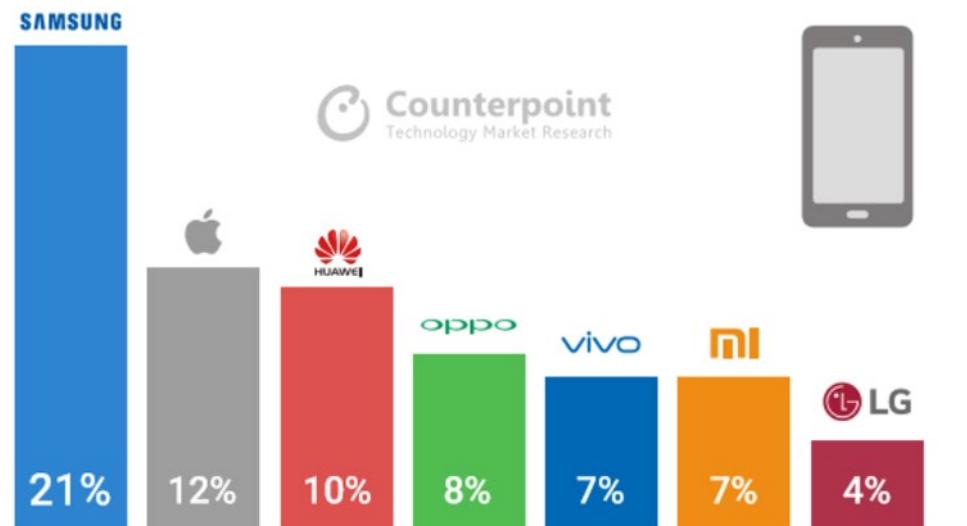
What is your first cell  
phone?



# Mobile Phone Market



## Global Smartphone Shipments Market Share Q3 2017



Source (1) 2007 : [https://www.phonearena.com/news/Four-years-of-disruption-cell-phone-industry-financials-2007-2011\\_id20153](https://www.phonearena.com/news/Four-years-of-disruption-cell-phone-industry-financials-2007-2011_id20153)

(2) 2017 retrieved from : <https://www.gizguide.com/2017/12/counterpoint-top-7-global-market-share.html>



Why Apple surged to become the second player in the cell phone market within 10 years' time?

What can we learn?

# Ant Financial

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- One of the world largest FinTech Companies



**2003**  
The birth of Taobao



**2003**



**2014**  
The birth of Ant Financials

**2014**

**2018**  
\$150B Valuation  
\$14B largest single  
funding by a private  
company

**2018**



**2021**

**2021**  
>\$315B valuation  
Ready for IPO

**2022**  
Will discuss in  
'regulation' topic

**2022?**



2003



淘宝网  
Taobao.com



Founded in US,  
1995;  
Entered the Chinese  
Market 2002

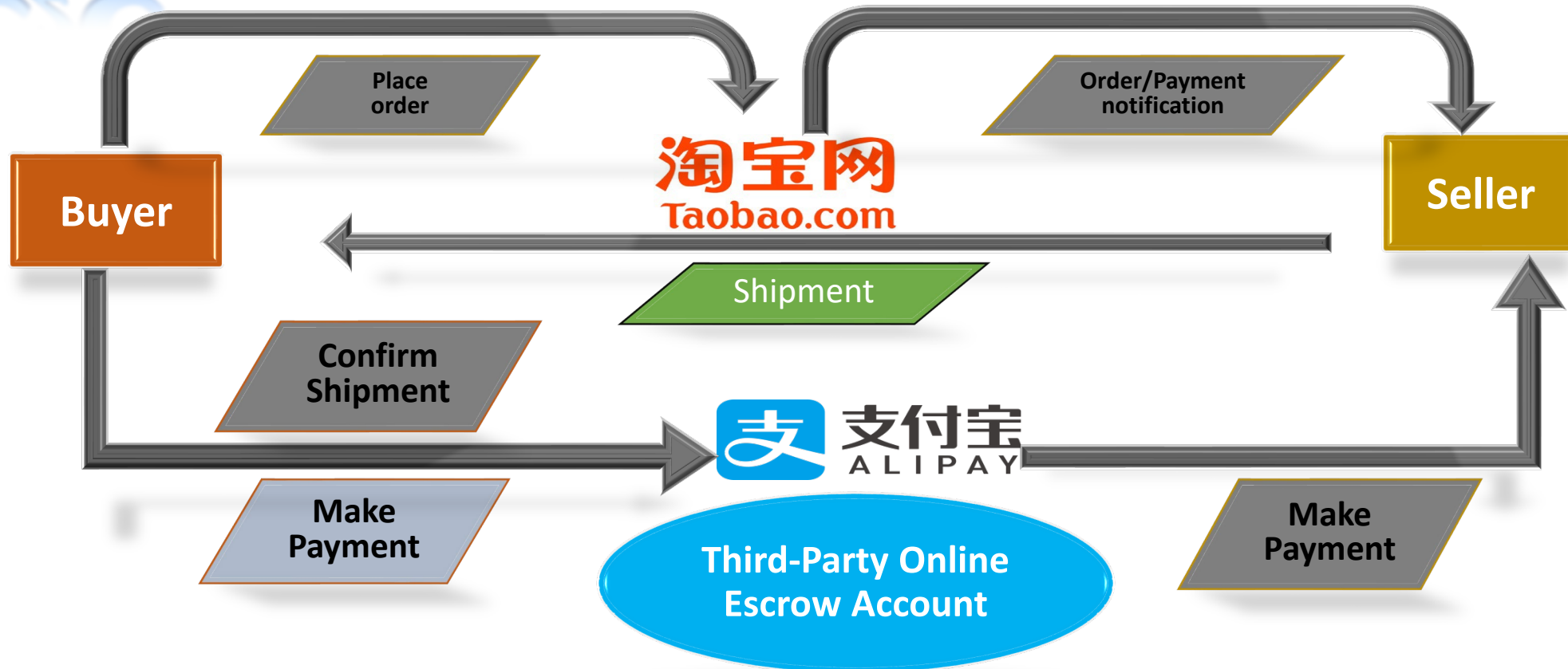
# Alipay: before Ant Financial



2003

Main hurdle: **lack of trust** between buyers and sellers online

Solution : **Alipay**- the escrow account of Taobao



## A Little Ant Challenges the Giant Banks

**2003  
Founded**

**淘宝网**  
Taobao.com



An attached  
payment tool

**What has  
happened to  
Alipay from  
2003 to 2014?**

**2014  
Re-branded**



**What Services  
Ant Financial is  
offering ?**

# In Class Case Study

## Prepare BEFORE Class



### The Rise of Ant Financial

Six years ago, Chinese fintech Ant Financial didn't exist. Today, it's one of the largest financial institutions in the world. Ant, an affiliate of Alibaba Group, is now three times bigger than Goldman Sachs (highest recent valuation in March 2021 \$315 billion, v. \$ 99 billion of Goldman Sachs). Having learnt the evolutionary journey of Ant Financial together, please discuss the following questions in class.

1. What is the key successful driver to Ant's growth?
2. How does Ant's business model work?
3. How are Ant's financial services changing traditional finance?
4. How to compete with Ant Financial?
5. What happened to Ant Financial in 2021?